

# AVIATION

*The Oldest American Aeronautical Magazine*

SEPTEMBER 6, 1926

Issued Weekly

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The Sesqui-Centennial Exposition from the air (Sesqui flying field on the left)

(By Victor Davis)

VOLUME  
XXI

## SPECIAL FEATURES

NUMBER  
10

NAVIGATING THE AIRPLANE RELIABILITY TOUR

MANY CIVILIAN PLANES ENTER NATIONAL AIR RACES

GARDNER PUBLISHING CO., Inc.  
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# AVIATION

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# A PREDICTION REALIZED



## The New Curtiss "FALCON"

**DURING** the past several months, the first group of Curtiss "Falcons" to be delivered to the Army have been undergoing service tests in the hands of Air Corps pilots.

As was foreshadowed when the "Falcon" won first prize in the Observation Competition at McCook Field, this new observation airplane has rapidly gained favor with the flying personnel, who have found it much faster and more maneuverable than the present service type.

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## The Formula Question

**I**T HAS been stated by well known aeronautical engineers that a good designer knowing beforehand the formula to be used in judging the Reliability Year could have designed a plane which would necessarily have won the Year. If this is so and planes can be designed to meet a given formula, the motor should be selected with the greatest care in order that the formula may develop a really practical plane of a type which is needed. The formula used this year seems to have worked out satisfactorily, but it seems to have put quite a premium on the planes with a high performance but carrying comparatively few passengers for their power.

This year's Year redrew to produce a formula which would suit all types of planes from the giant three-engine transport to the single-engine lightplane. That the formula worked successfully was partly due to the fact that there was only one element of each of the two extremely divergent types, and that neither of these were really officially entered in the race and neither completed the course. It is rather doubtful whether any commercial formula can be devised which will foster the development of all types. This year's Year was as successful in arousing the interest, not only of the general public but of the aircraft manufacturers as well, that it seriously seems that it would pay in the future to divide the Year up into various classes so that the formula would give definite encouragement to special types.

For example, there seems to be a growing desire for a two-engine plane for school and pleasure purposes. If a formula were devised which would encourage this type and special prizes were offered, there would undoubtedly be several such entries in next year's Year, and the Year would help to create a race and service type. In the matter of aerial service and transport types of planes the desirable features of the various types could be carefully studied so as to put a premium on these qualities. The matter of deriving a formula is not as easy as it seems, but if a formula is to be used it should be carefully studied out beforehand, clearheaded, desired areas and the formula concerned sufficiently be forecasted so that designers may build or modify their machines to realize the qualifications encouraged by the Year officials.

## Navigating Cross-country Flights

**W**HILE IT is true that in the services (military and naval) there have been times to depend on navigation instruments to a very large extent in cases not only cross-country flights, the studies that in general pay comparatively small regard to this phase of flying. For the most part he has learned to fly and to depend upon the ground guides in maintaining a correct course. The question of scientific navigation enters little into his activities and he is, in fact, to be congratulated that the reason he obtains from his instinctive sense of direction.

However, the importance of a certain degree of what

may be termed scientific navigation with the aid of ground instruments cannot be overlooked and was very admirably brought out in the performance of the Travel Air plane in the Commercial Reliability Year. It would appear, from the navigator's own account, that the true course maintained by this machine in the Year was possible largely as a result of careful map reading and the accurate determination of drift. These features are important and do not involve the use of very elaborate instruments nor do they call for much navigating expenses but the results obtained from a little attention given to these problems have been demonstrated to be well worth while.

## Disappointing Lightplane Progress

**W**HEN THE lightplane movement first appeared, great things were prophesied for this type of airplane. Manufacturers predicted a rapid growth and output, estimated by the extraordinary efficiency and economy of the type, were expected that the day of the "flier" plane had arrived. Almost four years have passed since lightplanes first made their records of high record and showed that they had the speed and ceiling and could be built at a price which would allow of a large market. Yet today, there is no factory which is turning out lightplanes in quantity, unless we count the De Havilland Moth or the Pender as lightplanes and this should hardly be done since each of these planes require as much horsepower per passenger as a Waco.

The lightplane has not fulfilled every promise and the true lightplane which carries a passenger on fifteen horsepower or less seems to be disappearing. This failure of development has been laid in many cases, lack of public interest, etc. The truth is not far to seek. There are two major elements in the development of aircrafts, namely, economy and safety. The lightplane possesses the first of these to an extraordinary degree but is wanting in the second. The lightplane was never destined to be used by the professional pilot, does not carry a large vehicle to pay the expenses of his salary and carry his passengers but it was destined to bring down the cost of flying so as to popularize it. This necessarily meant that lightplanes were to be flown by amateurs, in some of the fact that due to its low power and light wing loading a lightplane is really more difficult to fly than a larger plane.

As the lightplane will be flown by amateurs or students it will not come into its own until it is made as easy or easier to fly than the more powerful airplane. The development of the lightplane has already contributed a considerable amount of service to the country and its further development should certainly be encouraged by the giving of prizes and the opening of sporting events in which low power machines can be entered. Such contests are of great technical interest but to be of the greatest practical value a premium should be placed on the qualities of speed and economy rather than the mere emphasis being placed on speed and gasoline economy.











## Curtiss Falcon Plane Revised

*Changes Result in Improved Serviceability and Even Better Performance.*

**T**HE CURTISS Amphibian and Minor Conway has recently delivered a revised O-2 Falcon observation airplane to the Army Air Corps and the airplane is now at McCook Field undergoing test. The Falcon was described in the issue of AVIATION of July 30.



The revised Curtiss Falcon O-2 observation plane (Liberty 400 hp.)

In the revised machine the observer's cockpit has been made considerably deeper, thus protecting the observer from the elements and increasing the security of his position. The tailfinning of the tank, formerly used as an auxiliary air horn, has been made permanent, and faired in so to carry out the lines of the deeper fuselage. It is interesting to note that, in spite of this increased depth, the plane has been so carefully streamlined that the high speed of the machine has actually been increased.

Another important source of change is the revised

and rounded in for the observer's cockpit, resulting in greatly improved vision and making the Falcon much easier to fly from the rear seat than other observation types.

Other changes include a re-design of the rear seat to accommodate either seat or lay-type parachute, addition of a

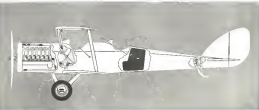
large baggage compartment, modification of mechanism of the engine mounting and minor changes in the location of instruments and accessories.

All of these changes have been made as a result of the recommendations of Air Corps personnel who have been flying the first prototypes of Falcons during the past few months. From present indications the revised machine will further enhance the popularity of the Falcon type, which has been steadily gaining favor with the flying personnel of the Air Corps.



Another view of the Curtiss Falcon (Liberty 400 hp.). Note the increased depth of fuselage incorporating the additional gasoline tank just aft of the tunnel type radiator.

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# GOODYEAR

## AVIATION EQUIPMENT

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## Marking the Airways

Standard Oil Co. of Indiana Progresses with Plan to Mark Airways.

By ALAN JACKSON  
Vis-Par. Standard Oil Co. of Indiana

THAT THE activities of our great commercial organizations are unceasingly spurred by other than purely selfish motives is well exemplified by the comparatively recent action of the Standard Oil Company of Indiana in undertaking the marking of the numerous airways which criss-cross that part of the United States where the Company has distributing facilities.

The need of some standard system of airway marking has been known and expressed ever since men began to make reconnaissance flights. This problem most acutely suggested by the fact it is to follow the windings of a river or at least one or another of our trunk line railways. These points enabled him to check his course when weather conditions rendered him lost.

From the air, towns, look very much alike, and it is not always easy to distinguish details of airports on the ground, particularly when the visibility is poor, the atmosphere slightly hazy, or when a thin veil of clouds obscures the landscape. Under such conditions the few sometimes have contact with the ground and before he knows it he is flying over strange territory.

Recognizing these difficulties, C. E. R. Wadley, vice president of the National

Aerial Association and Henry Bush, Div. N. A. A. of the State of Indiana, conceived the idea of marking the country with a series of large letter signs to be placed upon the roofs of buildings, or towers from which there were likely to get these markers were to be seen from the air in all directions. This was the first step in the plan. The idea was then discussed with Charles H. Wagner, manager of Standard Oil of Indiana, who recognized that the marking of the airways in bulk (others of his company would be used upon the same

airway signs. The Standard Oil properties are easily identified by the large white tanks which always are present, even though the observer be several thousand feet in the air and several miles away.

After working out the details of the scheme, Mr. Wagner submitted it to the executives of his company in Chicago, who, after a careful study of the problem, accepted the responsibility for the airways and authorized the necessary expenditures to carry out the work. The sign showing the name of the town and an example consisting of a circle enclosing the letters "SO" was designed at that time and since has been made standard. These red for a letter and blue for a circle, are made thus right feet high, having eleven one foot in width. These letters are painted clear white on a black ground. Following the International Convention, the top of the sign must always be toward the North and above the name is the symbol. Therefore there is a good landing field available in the vicinity of the town, a white arrow is painted in connection with the Standard Oil symbol, pointing directly toward this field.

Over 300 Stations Marked  
Before giving a general order to paint signs on the roofs of its buildings, the Company had one station near St. Joseph, Mo., painted and planes sent out to observe the effect. It was found that the signs could easily be read from a height of more than 2000 ft., and demonstrated the practical feasibility of the idea. Before final action was taken by the executives of the Standard Oil Company of Indiana, the general plan as stated was submitted to General Patrick, Chief of Air Corps, for his criticism and approval.

While it is still too early to report the final results obtained, it is known that today the airways of the United States are well on the way to become adequately marked. By the Standard Oil Company of Indiana territory spreads of 900 systems every the marked stations, while others are being painted as fast as possible.

It cannot be said that this tremendous job was undertaken in those great commercial organizations for purely selfish reasons. It was undertaken because the men charged with the management of the several companies are first-class businessmen. They realize that the State might take great chances, even, that they decided to a level where they can identify a town while checking their position. They know that of the time one minutes to obtain it from 2000 to 3000 ft. he is not likely to meet with a serious obstacle in case he is compelled to make an emergency landing, and they know the importance of maintaining the danger of flying in order that the establishment of commercial aviation can be encouraged.



An Example of the Method of First Marking



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## The Bird Two-Seater Touring Plane

*An OX-5 Engine Covered-Cockpit Type Two-Seater.*

VERY interesting Curtiss OX-5 engine covered airplane which has been produced during the past six or eight months is the Bird plane manufactured by the Bird Aircraft Company of San Diego, Cal. The plane has a very good performance and is the result of careful design conceived out by Lieut. N. A. Gaddard, U.S.N.

However, most noticeable in the design of the machine is the fuselage which is of the catia type with long windows on each side. Accommodations is provided for two persons and there is ample room for baggage in the cabin.

The wings are of wood construction and of Clark Y section, incorporating low type spars. On the other hand, the fus-



The Bird two-seater touring plane (Curtiss OX-5, 90 hp.)

As well as seen in the photographs, the Bird plane is of some less conventional aspect, being a biplane with a single tailplane, two on each side of the fuselage and a normal through into type undercarriage and the engine located under a simple cowling giving easy access to the cylinder heads. The radiator is of the well-known and, in the past, much used, nose type.

Lugs in of welded steel tube, were located where necessary. A few details of the Bird airplane together with the manufacturer's figures of performance are:

W. span	35.0 ft.
Wing I span	35.0 ft.
Wing II span	35.0 ft.
Wing III span	35.0 ft.
Wing IV span	35.0 ft.
Wing V span	35.0 ft.
Wing VI span	35.0 ft.
Wing VII span	35.0 ft.
Wing VIII span	35.0 ft.
Wing IX span	35.0 ft.
Wing X span	35.0 ft.
Wing XI span	35.0 ft.
Wing XII span	35.0 ft.
Wing XIII span	35.0 ft.
Wing XIV span	35.0 ft.
Wing XV span	35.0 ft.
Wing XVI span	35.0 ft.
Wing XVII span	35.0 ft.
Wing XVIII span	35.0 ft.
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Wing XX span	35.0 ft.
Wing XXI span	35.0 ft.
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Wing XXVI span	35.0 ft.
Wing XXVII span	35.0 ft.
Wing XXVIII span	35.0 ft.
Wing XXIX span	35.0 ft.
Wing XXX span	35.0 ft.



Another view of the Bird two-seater touring plane (Curtiss OX-5, 90 hp.)

## The Winning Combination



Western Union flying machine, showing the engine and the fuselage.



Western Union flying machine, showing the engine and the fuselage.

Goldsmith says "Step and motor performed wonderfully". Beach says "Finance instruments were double factor".

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See the "Flying Showcase" at the Races.

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### New N.A.T. Schedule

A fifteen minute later departure of northern N.A.T. air mail planes from Dallas and Fort Worth, Tex. to Chicago, will considerably benefit Southwest Texas points on their use of the air mail service, and according to the N.A.T. schedule has been allowed to effect this advantage.

Port Arthur, Beaumont and Galveston, are the principal cities benefited, but Houston and San Antonio also will be able to make use of later times on air mail dispatches as a result of the new arrangement. Under the present schedule,



N.A.T. executives left to right, E. P. Lutz manager of western Port Houston general manager, and C. T. Luskington chairman of the national committee N.A.T.

connections are not always made at Dallas and Fort Worth with the mail planes by early morning trains from the South. The new schedule is designed to improve the situation. It saves time the departing train at all cities on the route and brings the mail into Chicago at 7:30 p. m., fifteen minutes later than formerly but still in time to catch the overnight Government train for New York, which leaves at 8 p. m.

### A United States-Europe Air Route Again

A trip of investigation to Belgium, Ireland, for the purpose of studying weather conditions and the possibilities of a future airplane route between Europe and the United States has recently been made by Dr. Hunsinger and Dr. George, university professors at Hamburg, Germany.

The proposed air route would start at Hamburg and pass via Rangoon, the Far East Islands, Belgium and Cape Cod, New York, Cleveland, and would have New York as its ultimate destination. It is planned to send a later scientific expedition by Rotterdam next year for the purpose of investigating in detail all conditions which would be likely to affect the operation of airplanes over the contemplated route.

### Side Slips

By Robert R. Osborn

Scoundrels are absolutely despised of more long remembered in our self-exaggerated love of showing the unscrupulousness engaged in "when airplane business" here to advertise properly. After all at your best tell it to the citizens for the last few months, a prominent designer distinguished our advice together, and had the first flight of his Trans-Atlantic plane in the same old day. There were no party girls in his photographed flying over the poplars, no famous entrance at the controls for the first flight, and no highly-iced airplane scolding "The Spirit of the Trans-Atlantic Flight" to describe the plane when it came out at the hangar. We late to have to see the old "hold on up," but we want point out to the designer that most of the crowd, that might have moved his first flight, was over at a neighboring hotel watching another aviation lounge take off party girls dancing around an old Curtiss Osprey.

We must admit, though, that even if our oft repeated advice did go unheeded, the new plane certainly did not suffer from a lack of newspaper publicity. Most of the newspaper articles were very enthusiastic about the new machine, as everyone who has seen it previous month to be, but some of the reports of the facts were surely bordering on the melodramatic and resembled of "Tom Swift and His Monoplane" days. Here are a couple of the press quotations taken at random from the New York newspapers: "Less than 200 yards from the start, her wheels seemed to fire of the subterranean and decide to roll along on the six, mark as a man sometimes feels half walking an airplane in a dream. The S-38 was off. "Fairness seemed," and something with a very big head," what a day!" "With the three 425 hp. Jupiter engines on fire brightly, the giant ship led round into a loop?" "The big plane appeared to the outside as easily as a woman home due to the loud laugh of the air."

The State Department at Washington, according to the press, has requested permission from a number of South American countries, for the Army planes to make a 20,000 mile run of the mainland. Of course, we cannot claim to be as expert in international affairs, but if we may express an opinion, this request for permission to fly over those countries is surely too premature. The flight apparently is not to take place until December and possibly some of the governments now granting this permission, will be in power when the flight is actually started.

A recent advertisement for an automobile using an air-cooled engine contains the statement that "nearly every new design in commercial planes has chosen the air-cooled engine, according to one of the country's leading aircraft engine experts." Pardon Corbett: Who is the leading aircraft engine expert referred to? Answer to the puzzle are listed in one person and none can be mailed without face view. The basis for awarding the prize will be that anyone unable to answer correctly will not be allowed to receive his subscription to AVIATION without the payment of the usual four dollar fee.

When we saw the Intrepid Answer last, he was on his way come to offer his story a bit of advice. He thinks that, with the New York-to-Puerto Rico plane shortly loaded for that trip and its consequent low ceiling above sea level, it might be a good idea to take off at high tide, thereby gaining an extra four or five feet.

## AIRPORTS AND AIRWAYS

### Alhona-Tysons Aero Club

By Walter A. Price

The Alhona Aero Club has organized in January 1926 with a membership of 100. The original membership was increased to twenty-five and there is a suitable field was sought out. A field was located near where the city. It lies between the tracks of the gas line of the Pennsylvania Railroad and the Grand Central Terminal. It is 1500 ft. East of the Western Alhona Speedway which serves as a model for the field. The field is marked by a large white circle which can be seen from a distance. The field contains thirty seven road planes and under way to the adjoining land which will increase it to approximately fifty acres. There are no hangars on the field at the present time, planes being left at the open. However, we hope to have outside buildings erected before cold weather comes.

All those are needed to use this field at all times, especially those who are attending the National Air Races at Philadelphia. Gasoline, oil, sugar, etc., can be stored here and all necessities possible will be given.

Some time ago the town of Tysons, which is five miles East of the field added to be incorporated in connection with this project. A vote was taken and it was decided that in the future the club was to be located in the Alhona-Tysons Aero Club and the field as the Alhona-Tysons Airport. The people of Tysons are behind the movement and with combined efforts of the two towns the field should be developed into a very modern one in every respect.

From the capital the club has given under the general membership is seventy-five.

Local there have been using the field extensively during the summer. Ralph Hayes has been doing a lot of commercial work, carrying passengers and giving instruction. Ralph Bohrer, a newcomer from Timonium, has been Standard at the



Alhona-Tysons Airport. The square shaped piece of land at the top corner of the picture is the field.

field and handling afternoon field. Ralph has taken passengers up. Earl French has his Jenny plane and it has been down by several at the follow. Finally, it is one of our best leaders. There have been several other planes at the field,

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## Helena Airport News

May 1, 1936

Benck Hark has disposed of his three Standard 12s. Benck Hark of Minnola who had a little tough luck with his faithful K-6 Standard sometime previous. Benck Hark is doing wonderful work operating the "Aeronautical Division" in and around the vicinity of Memphis.

Harold Lynch of Belle recently visited Helena in his Standard and he took up from the point he recently obtained from Carl Tyler of Lexington. With him was his 11 year old daughter who certainly enjoys flying and got quite a "kick" out of the trip. The return flight was a little delayed because of rain that had been brewing over morning, and the weather remained dark and dreary long after an expert take-off.

A false rumor that an expert elephant trainer was coming from Kansas to Canada via Helena to recapture several escaped elephants from the Belle Plaine Circus caused some of the aeronautical students to keep their eyes peeled and their ears open without the just reward. We were expecting to see a new Travel Air or a Stinson, but got only more noise from our visitors.

The two light planes under construction by the Zenith Airplane Company are not advancing as rapidly as was reported because of a fast common to the majority of us. They will be out for test flight sometime this Winter along with a light triplane before. Mr. Hark has temporarily dropped the idea of constructing a color three engine job due to various reasons.

Ed Parkinson is doing his old Jerry up into wonderful shape. He has "mopped" the engine up and has gone out over the landscape until it is looking almost like a PW-6.

Jack Lay is giving us some helpful studies, and says to keep an eye on the short for a few more planes. Jack will be finished one of these days. Lack of sufficient funds has retarded the progress on the plane, but things are bright-

ening to materialize. He and Harry Stone, who is at present operating a vacation in Laurel, have conceived a plan whereby they can take around bend material in on a new one just as we can fly with ours, without sustaining much of a loss. Good buying.

What brings up the question, "How could Persons fly with such little money?"

## Memphis, Tenn.

The hope that business men and aviation enthusiasts have as long cherished for a public airport in Memphis has at last been realized with the selection of a field at Woodstock. Construction and the making of improvements are now under way, and the formal opening and dedication will take place in the near future. The first step in the plan that culminated in giving the city an adequate landing field was the formation of the Memphis Aero Club, Inc., last American Day. The original membership of the club was composed, chiefly of former service fliers, which was later extended to include business men interested in the development of aviation in Memphis.

President Brown, of the Chamber of Commerce suggested a committee, of which Edna W. Wiggins is chairman, to secure a landing field, the suggestion being made without appropriation of funds. Yvonne C. Cagle, a local scientist, made surveys for available sites, which resulted in the selection of Woodstock, 11½ mi. from Memphis. The field is on the Memphis Highway, extending 3,000 ft. to the Illinois Central right-of-way, with a cross runway north and south of the same length. Pending the approval of the Shelby County Government was completed in the field, which is considered one of the most important parts of the undertaking.

The Memphis Aero Club, Inc., holds the lease and pays the owners \$10. per acre per year. Taxes cover a five-year period. Before the period of the lease, definite plans for the purchase of the field will be formulated.

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Vernon C. O'Neil, who has been appointed manager, has contracted for hangars and expects to have them ready in a month. Piling stations have been installed and a stall house and parking space will be the next previous work.

The field will be dedicated to the memory of Owen Armstrong, Memphis aviator, who lost his life over the Irish shore during the World War.

The committee consists of Edwin Williams, Sol Sechen and Louis Connelley.

Executive Council, president, Louis Connelley, vice president, Louis Whitton, secretary, Robert Harvey, treasurer, Edwin Williams and W. Percy McDonald.

**Detroit, Mich.**

On July 26, Eddie Stinson flew the Detroit cabin plane, equipped with the Wright Whirlwind, 500 hp., six-cylinder engine, to Muskegon Island, in the Straits of Mackinac. He carried with him Mr. and Mrs. Edward F. Schick, of Detroit. Mr. Schick is president of the Wayne Oil Corp., of Detroit. The trip from Detroit to Muskegon was made in 3 hr., 30 min., the distance being about 300 mi. The return trip was made in 3 hr., 28 min., with the help of a tail wind.

Mackinac is one of the country's most beautiful summer resorts and the beauty of the island has been maintained by reason of the fact that an automobile has never been permitted there. When the Stinson-Detroit landed on the golf course, in front of the Grand Hotel, it was the first machine to arrive, and, of course, the first plane, ever to do so.

It requires 24 hr. to visit Mackinac by boat. A number of persons spend their vacations there, so that will include the first time the airplane can give its service to this resort.

**Havana, Cuba.**

Cable announced its first official international flight recently when Capt. E. Lehotzky and Lieut. O. Merrill, Cuban Army aviators, started from Havana for Port-au-Prince, Haiti, in two Army planes. The first stop was Guayaquil, Cuba.

#### Milwaukee, Wis.

The second annual Wisconsin Air Derby, which was witnessed by 20,000 spectators, demonstrated to the utmost the possibility of aviation. Before the start of the Coast to Coast Pageant, a mass of planes, from the Strohbecker Trust, flew over the field, and landed at the Haddonfield Airport, on miles from the airport grounds. Numerous events were held, but the one which attracted chief interest was the race on a four mile course over Lake Michigan, which was one of the last. French Strohbecker and Don Koon finished together, at the end of sixty miles, and were crowned "The Kings of Flight." The pilots were: Don Koon, French Strohbecker, R. J. Williams, Fred Imhof, A. W. Schwarz, Olin Heinenberger, Edwin Strohbecker, J. P. Wood, Ray D. Lerner.

#### Wichita, Kansas

On Aug. 24, in a plane piloted by A. A. Bennett, of Fairbanks, Kansas Governor William Salter, of New York, visited Wichita, Kansas. Bennett, who had never before been outside of New York, was accompanied by a number of men and women who were seated in the plane. The trip was made in 3 hr., 30 min., with the help of a tail wind.

#### Alaskan Survey Proves Inverted Liberty

The Alaskan Survey Expedition has just reported to the Department of the Navy Department that the inverted Liberty engine used in the airplanes on the survey has put in more than 100 hours of flying time and still was functioning perfectly. A flight of 600 miles into the interior was made and landings were effected in fields and on river bars.

Only one forced landing is reported to have occurred in Alaska, this due to a light mist in the lower strata, which was cleared through the clouds. The engine was repaired on the spot, the report states, and since then has operated so well as ever.

## B. B. T.

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## PUBLISHER'S NEWS LETTER

This winter is to be the critical period for the new air transport companies that have commenced operation in this country. The weather, which has so much to do with regularity of the operation of the air routes, will then have its opportunity to do its worst; and the resulting delays will have a decided effect on the traffic that the lines have been able to build up. It is not so immediately that some of the services will be irregular during the worst stretches of the cold season, and at times the mails sent by the regular air lines. It will not show a weakness if this situation is faced without any false bravado. The Air Mail has kept its service open during the most severe weather for the last few years, but it has not had to face the problem of income and expenditure, at least from the stockholders' standpoint.

\* \* \* \*

If the air lines that have started will reward this first year as one of expansion and not attempt to blossom full blown into a regular transportation service, they will show an intelligent attitude that may in the long run bring them a good return for their outlay. If the public does not expect an acknowledgment of first class service beyond the luxurious of prompt service. While it may be hard for some of the more optimistic air transportation enthusiasts to restrain their expectations, wisdom will be shown by those who take a long range view of air transport in giving the weather all due consideration when making their winter plans.

\* \* \* \*

The traffic problem which is the most important one that has to be faced by all the air routes will have become fairly well understood by the time the snow flies and the sets of air lines will expect the same service that they have had during the summer. On the lines that operate in the North this will be difficult to give, and rather than to create a spirit of discontent it may be better to frankly face the situation than put it squarely all the good work of the past year. Service and regularity are the necessary fundamentals of air transport. When these fail, the confidence of the public is undermined and it may take a long time to rebuild the good-will that might be lost through attempting to do too much. The mail must get through, but when the elements have been asked to other forms of transportation they have not had standing because of the delays or because they had any kind of transportation that was available. Those who believe that the Kelly Bill gave an

impetus to change in this country, should also recognize that the carrying of mail alone is the most existing of all services. Passengers and goods have been subject to delays from the beginning of time, but the mail has to be put through. It is in the same direction that the chief danger to an air transport came that the chief danger may be.

\* \* \* \*

During the year 1927, the tendency of air transport in this country was false defeatism. These companies that offered their services to include other branches of aerial activities may have a much better chance than those that simply use their facilities for the transportation of mail, goods and passengers. There is no reason why the large overheads that are necessary for the operation of any transportation enterprise should not be used to afford the public the other class of service that has come to be known by the name Aviation gate air-land service. Many aerial service companies that have not had adequate financial backing might form alliances with the air transport operators that would be mutually profitable. True facilities for emergency and over the plains trip, aerial photography, some of the simpler forms of aerial advertising, and carrying mail add greatly to the revenues of the companies without increasing the overhead at all. It is alone these lines that money is being made in the past and these air transport companies that have every opportunity to make themselves all around enterprises will reap a reward that may be the difference between the red and the black.

\* \* \* \*

The most serious air line in the world, the Bolivia which operates in South America has made a striking success by using its facilities in every way it could to make money, as well as from the operation of its air routes. It has even gone so far as to use any air money as its basis to earn a commission through the transfer of funds. With such an example and a precedent, it will not be a sufficient answer to say that capital is not interested in other forms of aerial work than air transport. Capital is only interested in an enterprise that shows a promise of a real return on an investment. If air transport alone is the beginning is not able to carry the burden, then the capital that has been invested in air transport companies will be glad to secure its return from any source, even though it be an allied service to the main enterprise.—L. D. C.

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FOR SALE: Curtiss airplane, JN-4-D model Curtiss, OX5 motor, 38-40 ft. body, 180 ft. floats, aluminum float, metal float, motor, 1475 on ground, 15 hours, ready to fly, \$2,500. This J. D. Cox, 522 Broadway Ave., Pittsburgh, Pa.

FOR SALE: One JN-4-D, good condition. Hammondsport, N.Y., 1480. Priced for quick sale, \$750.00. Ready to fly. See E. W. Cleveland, Mexico Field, Bridgeville, Pa.

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